

Figure 1 Schematic of the Present Invention's Architecture

Tow

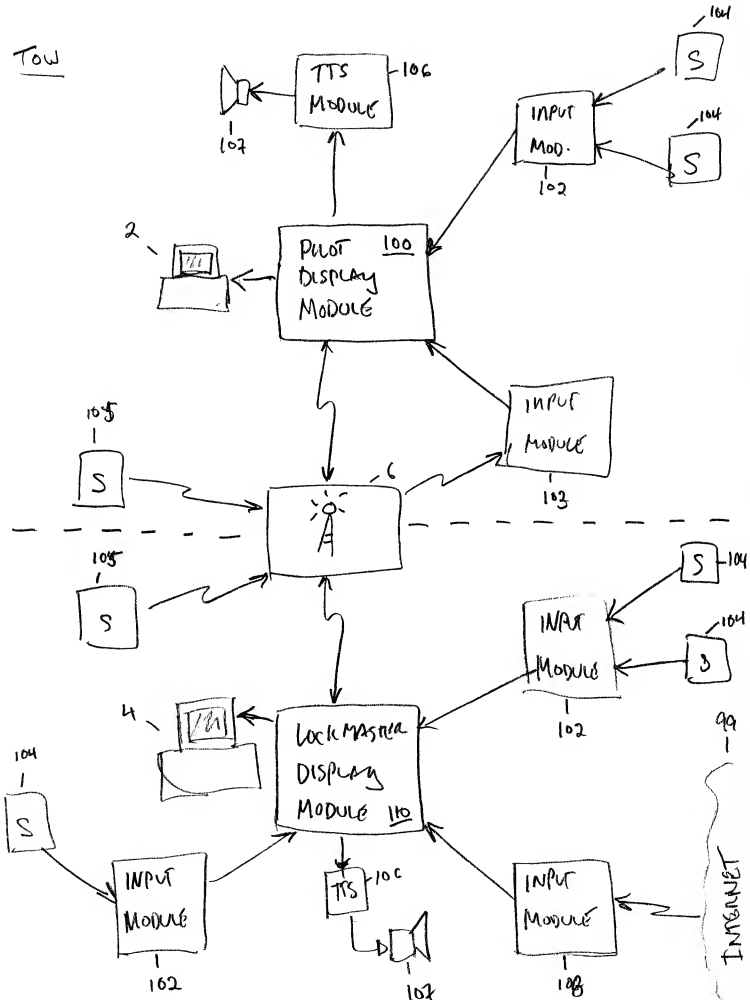


FIG. 2

Lock

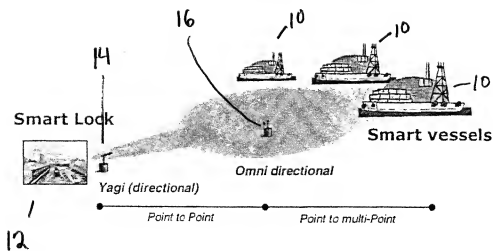


Figure 7-2. SmartLock System Network Topology

Fig. 3

SmartLock: Towboat Setup

Towboat No:

Towboat Name:

Towboat Type:

Towboat Size
Length: feet

Width: feet

Figure 4 Towboat Setup

(22)

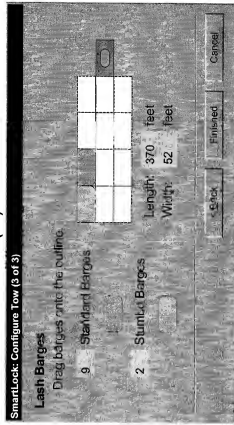


Figure 5 Configure Tow

(24)

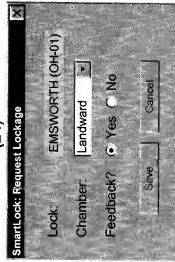


Figure 6 Request Lockage

(26)

SmartLock: Lock Conditions

Dam Opening: 10 feet

Upstream River Current

Direction: ☒ In ☐ Out

Strength: Weak

Downstream River Current

Direction: ☒ In ☐ Out

Strength: Weak

Wind

Direction: North

Strength: Weak

Update Cancel

Figure 7 Update Lock Conditions

(30)

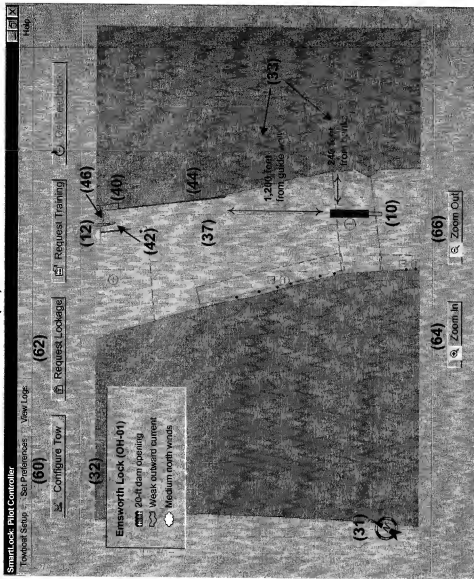


Figure 8 Pilot Display for Tow Approaching the Lock

(34)

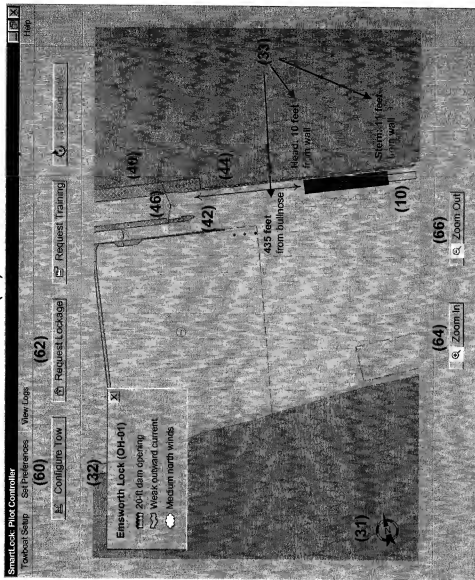


Figure 9 Pilot Display for Tow at the Lock

(34)

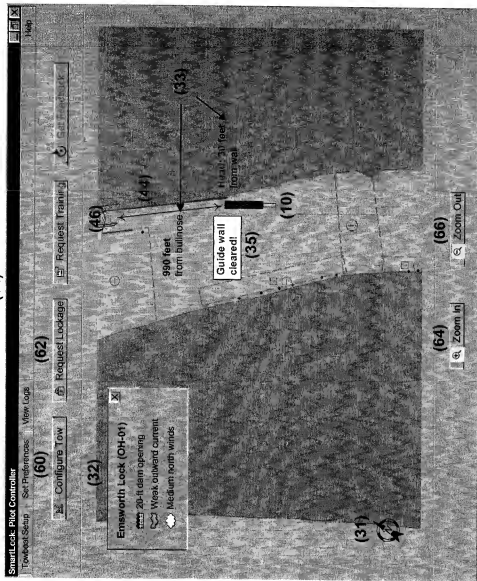


Figure 10 Pilot Display with Sample Alert

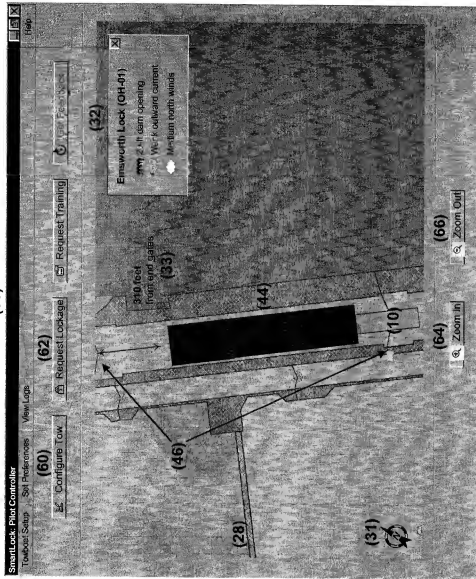


Figure 11 Pilot Display with Tow Inside the Lock

Emsworth Lock
 8-ft dam open
 Medium out
 Weak north

32

12

28

33

470 feet
from oblique

45

44

33

Bow < 1 foot
from guide wall

10

33

Stem 9 feet

317



Fig. 13